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(54) Title: **REGULATION OF SPERM FUNCTION**

(57) Abstract: An extracellular matrix protein, such as fibronectin, vitronectin or laminin, is added to a sperm sample to bring the sperm into a low motility, non-capacitated state or maintain a pre-existing non-capacitated state. Subsequently, at an appropriate time in an *in vitro* fertilization study or *in vivo* fertilization procedure, angiotensin II or a related peptide is added to the sperm sample to enhance motility and capacitate the sperm. The extracellular matrix protein prevents undesirable early natural capacitation, and artificial insemination procedures can be made more precise, as sperm can be brought to the right state of capacitation for transfer at precisely the right time. The treatment with angiotensin II can be combined with use of the peptide RGD to compete with the binding of the extracellular matrix protein and so suppress its effect.

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